Imagining and engineering the future

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Caltech engineer, scientist, and entrepreneur, Theodore von Kármán famously said, “Engineers create the world that never was.” Indeed, engineers are constantly transforming and reshaping the world around us in unimaginable ways for the benefit of the society. The advances in technologies have resulted in applications ranging from autonomous vehicles to medical devices to space. Many of the innovations have been enabled by an interdisciplinary approach and the convergence of sensing, information, and artificial intelligence. The talk will describe a focused and engineering science-based approach that can lead to breakthroughs. Illustrative examples of current research at Caltech in robotics, machine learning, medical imaging, quantum engineering, advanced materials, and devices are presented. Thoughts and observations regarding future directions for engineering education and research are discussed.